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in Rats Exposed to ACM Combustion

PRINCIPAL INVESTIGATOR: Dr. Paul Reinhart

CONTRACTING ORGANIZATION: Naval Health Research Center

San Diego, California 92186-5122

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Introduction

This research involves characterization of the pulmonary toxicity associated with exposure to combustion atmospheres of advanced composite material. Using rats as the animal model, we determine the changes to the respiratory system defining the cellular and molecular alterations which preclude lung injury. By identifying the critical pathways necessary for the development of lung injury in this model, we can apply this knowledge toward the development of new and improved methods of treatment.

Body

To date, the exposures necessary to complete the control groups have been completed. The animals have been sacrificed and the lung lavages completed. Cell counts and identification have also been performed. Unfortunately, due to the extreme difficulty in obtaining the composite material, the combustion groups have not been completed. Only recently have we been able to obtain composite material thereby putting the project approximately 6 months behind schedule. Analyses cannot be performed until the smoke groups are completed since the comparison is between controls and combustion groups. Work remaining to be completed for year 1 is as follows:

Expose rats to combustion atmospheres with interim sacrifices at 1,3,7,21 and 156 days. Run cytokine and protein analyses for comparison between controls and composite groups. Compare cellular changes as well as histological changes. This work will be completed in the early part of year 2 and should have minimal impact on the scheduled work designated for year 2.

Key Research Accomplishments

Control group exposures are finished.

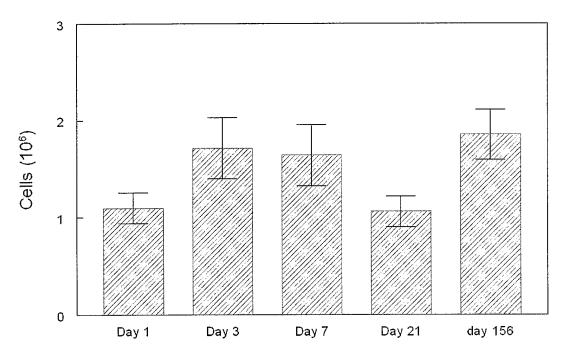
Reportable Outcomes

BALF Cell Differentials

Group	Macrophages	PMNs	Lymphocytes
Controls Day 1	98.750 ± 0.277	0.650 ± 0.172	0.600 ± 0.120
Controls Day 3	98.575 ± 0.301	0.925 ± 0.245	0.275 ± 0.065
Controls Day 7	97.850 ± 0.313	1.500 ± 0.233	0.657 ± 0.162
Controls Day 21	97.950 ± 0.640	1.375 ± 0.569	0.714 ± 0.114
Controls Day 156	98.250 ± 0.250	1.250 ± 0.269	0.500 ± 0.107

BALF CELL COUNTS

Controls



Represents the mean and SE for each group.

Conclusions
Normal cell counts and differentials within the control groups
References
None.

None.

Appendices